

FIG. 1

STEP A: THE PREPARATION CYCLE PREPARE GRAPHITE ROD AND WIND WITH WIRE. PREPARE SUBSTRATE AND THERMOCOUPLE.

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STEP B: THE ASSEMBLY CYCLE

ATTACH GRAPHITE ROD AT DESIRED POSITION ON FEEDTHROUGH ON BASE PLATE.

ATTACH SUBSTRATE AT DESIRED POSITION ON SUPPORT ON BASE PLATE.

BRING THERMOCOUPLE INTO INTIMATE CONTACT WITH BACK OF SUBSTRATE.

STEP C: THE SEALING CYCLE

PLACE O-RING ON BASE PLATE.

PLACE CHAMBER COVER ONTO BASE PLATE AND BOLT DOWN.

ATTACH COOLING WATER HOSES TO CHAMBER COVER, ELECTRIC POWER CONNECTIONS TO FEEDTHROUGHS, VACUUM LINE AND HYDROGEN LINE.

CONNECT THERMOCOUPLE AND PRESSURE TRANSDUCER TO DATA LOGGING SYSTEM AND GAUGES.

STEP D: THE RAMP—UP & DEPOSITION CYCLE
ALTERNATELY EVACUATE AND BACKFILL WITH HYDROGEN.
BRING HYDROGEN PRESSURE TO DESIRED LEVEL.
INCREASE VOLTAGE TO GRAPHITE ROD UNTIL SUBSTRATE
TEMPERATURE IS AS DESIRED.

STEP E: THE EXTRACTION CYCLE

WHEN DESIRED DEPOSITION TIME IS REACHED, TURN OFF POWER TO GRAPHITE ROD.

AFTER THE SYSTEM HAS COOLED, ADMIT AIR, UNBOLT CHAMBER COVER AND REMOVE.

REMOVE SUBSTRATE AND EXAMINE VIA OPTICAL MICROSCOPY, SCANNING ELECTRON MICROSCOPY, ATOMIC FORCE MICROSCOPY, PROFILOMETRY, RAMAN SPECTROSCOPY, ETC.

FIG. 2

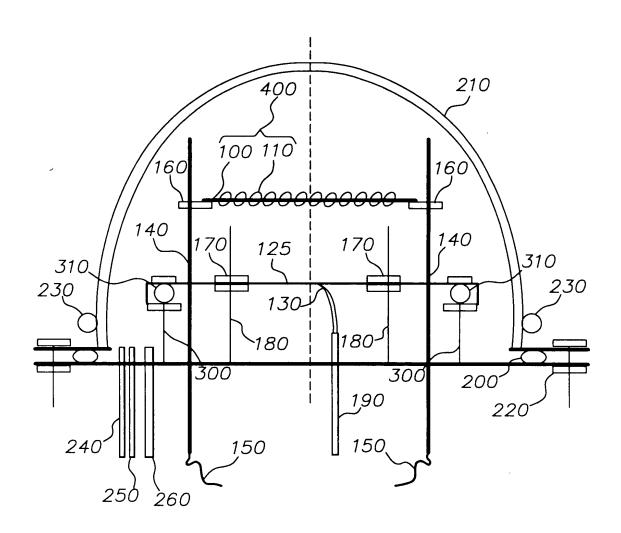


FIG. 3

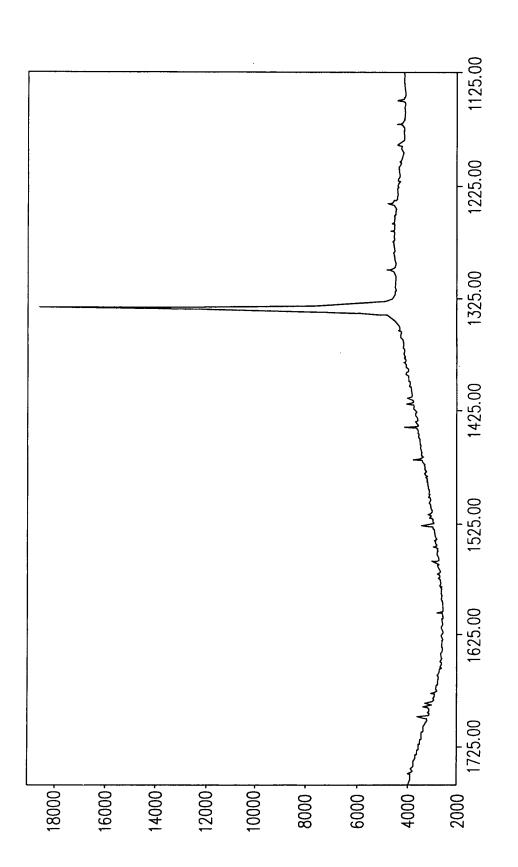


FIG. 4